



#3 ENTERED

OICE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/950,041

DATE: 05/16/2002 p.6
TIME: 13:06:15

Input Set : A:\DX0724XK1seqlist.txt

Output Set: N:\CRF3\05162002\I950041.raw

3 <110> APPLICANT: Hardiman, Gerard T.
 4 Rock, Fernando L.
 5 Bazan, J. Fernando
 6 Kastelein, Robert A.
 7 Ho, Stephen W.K.
 8 Liu, Yong-Jun
 10 <120> TITLE OF INVENTION: RECEPTOR PROTEINS; RELATED REAGENTS AND METHODS
 12 <130> FILE REFERENCE: DX0724XK1
 14 <140> CURRENT APPLICATION NUMBER: 09/950,041
 C--> 15 <141> CURRENT FILING DATE: 2002-05-06
 17 <150> PRIOR APPLICATION NUMBER: 09/728,540
 18 <151> PRIOR FILING DATE: 2000-11-28
 20 <150> PRIOR APPLICATION NUMBER: 60/207,558
 21 <151> PRIOR FILING DATE: 2000-05-25
 23 <150> PRIOR APPLICATION NUMBER: 09/073,363
 24 <151> PRIOR FILING DATE: 1999-06-05
 26 <150> PRIOR APPLICATION NUMBER: 60/044,293
 27 <151> PRIOR FILING DATE: 1997-05-07
 29 <150> PRIOR APPLICATION NUMBER: 60/072,212
 30 <151> PRIOR FILING DATE: 1998-01-22
 32 <150> PRIOR APPLICATION NUMBER: 60/076,947
 33 <151> PRIOR FILING DATE: 1998-03-05
 35 <160> NUMBER OF SEQ ID NOS: 45
 37 <170> SOFTWARE: PatentIn version 3.1
 39 <210> SEQ ID NO: 1
 40 <211> LENGTH: 2367
 41 <212> TYPE: DNA
 42 <213> ORGANISM: Homo sapiens
 44 <220> FEATURE:
 45 <221> NAME/KEY: CDS
 46 <222> LOCATION: (1)..(2358)
 47 <223> OTHER INFORMATION:
 50 <220> FEATURE:
 51 <221> NAME/KEY: mat_peptide
 52 <222> LOCATION: (67)..()
 53 <223> OTHER INFORMATION:
 56 <400> SEQUENCE: 1
 57 atg act agc atc ttc cat ttt gcc att atc ttc atg tta ata ctt cag 48
 58 Met Thr Ser Ile Phe His Phe Ala Ile Ile Phe Met Leu Ile Leu Gln
 59 -20 -15 -10
 61 atc aga ata caa tta tct gaa gaa agt gaa ttt tta gtt gat agg tca 96
 62 Ile Arg Ile Gln Leu Ser Glu Glu Ser Glu Phe Leu Val Asp Arg Ser
 63 -5 -1 1 5 10

RAW SEQUENCE LISTING

DATE: 05/16/2002

PATENT APPLICATION: US/09/950,041

TIME: 13:06:15

Input Set : A:\DX0724XK1seqlist.txt

Output Set: N:\CRF3\05162002\I950041.raw

65	aaa aac ggt ctc atc cac gtt cct aaa gac cta tcc cag aaa aca aca	144
66	Lys Asn Gly Leu Ile His Val Pro Lys Asp Leu Ser Gln Lys Thr Thr	
67	15 20 25	
69	atc tta aat ata tcg caa aat tat ata tct gag ctt tgg act tct gac	192
70	Ile Leu Asn Ile Ser Gln Asn Tyr Ile Ser Glu Leu Trp Thr Ser Asp	
71	30 35 40	
73	atc tta tca ctg tca aaa ctg agg att ttg ata att tct cat aat aga	240
74	Ile Leu Ser Leu Ser Lys Leu Arg Ile Leu Ile Ile Ser His Asn Arg	
75	45 50 55	
77	atc cag tat ctt gat atc agt gtt ttc aaa ttc aac cag gaa ttg gaa	288
78	Ile Gln Tyr Leu Asp Ile Ser Val Phe Lys Phe Asn Gln Glu Leu Glu	
79	60 65 70	
81	tac ttg gat ttg tcc cac aac aag ttg gtg aag att tct tgc cac cct	336
82	Tyr Leu Asp Leu Ser His Asn Lys Leu Val Lys Ile Ser Cys His Pro	
83	75 80 85 90	
85	act gtg aac ctc aag cac ttg gac ctg tca ttt aat gca ttt gat gcc	384
86	Thr Val Asn Leu Lys His Leu Asp Leu Ser Phe Asn Ala Phe Asp Ala	
87	95 100 105	
89	ctg cct ata tgc aaa gag ttt ggc aat atg tct caa cta aaa ttt ctg	432
90	Leu Pro Ile Cys Lys Glu Phe Gly Asn Met Ser Gln Leu Lys Phe Leu	
91	110 115 120	
93	ggg ttg agc acc aca cac tta gaa aaa tct agt gtg ctg cca att gct	480
94	Gly Leu Ser Thr Thr His Leu Glu Lys Ser Ser Val Leu Pro Ile Ala	
95	125 130 135	
97	cat ttg aat atc agc aag gtc ttg ctg gtc tta gga gag act tat ggg	528
98	His Leu Asn Ile Ser Lys Val Leu Leu Val Leu Gly Glu Thr Tyr Gly	
99	140 145 150	
101	gaa aaa gaa gac cct gag ggc ctt caa gac ttt aac act gag agt ctg	576
102	Glu Lys Glu Asp Pro Glu Gly Leu Gln Asp Phe Asn Thr Glu Ser Leu	
103	155 160 165 170	
105	cac att gtg ttc ccc aca aac aaa gaa ttc cat ttt att ttg gat gtg	624
106	His Ile Val Phe Pro Thr Asn Lys Glu Phe His Phe Ile Leu Asp Val	
107	175 180 185	
109	tca gtc aag act gta gca aat ctg gaa cta tct aat atc aaa tgt gtg	672
110	Ser Val Lys Thr Val Ala Asn Leu Glu Leu Ser Asn Ile Lys Cys Val	
111	190 195 200	
113	cta gaa gat aac aaa tgt tct tac ttc cta agt att ctg gcg aaa ctt	720
114	Leu Glu Asp Asn Lys Cys Ser Tyr Phe Leu Ser Ile Leu Ala Lys Leu	
115	205 210 215	
117	caa aca aat cca aag tta tca agt ctt acc tta aac aac att gaa aca	768
118	Gln Thr Asn Pro Lys Leu Ser Ser Leu Thr Leu Asn Asn Ile Glu Thr	
119	220 225 230	
121	act tgg aat tct ttc att agg atc ctc caa cta gtt tgg cat aca act	816
122	Thr Trp Asn Ser Phe Ile Arg Ile Leu Gln Leu Val Trp His Thr Thr	
123	235 240 245 250	
125	gta tgg tat ttc tca att tca aac gtg aag cta cag ggt cag ctg gac	864
126	Val Trp Tyr Phe Ser Ile Ser Asn Val Lys Leu Gln Gly Gln Leu Asp	
127	255 260 265	
129	ttc aga gat ttt gat tat tct ggc act tcc ttg aag gcc ttg tct ata	912

RAW SEQUENCE LISTING

DATE: 05/16/2002

PATENT APPLICATION: US/09/950,041

TIME: 13:06:15

Input Set : A:\DX0724XK1seqlist.txt

Output Set: N:\CRF3\05162002\I950041.raw

130	Phe	Arg	Asp	Phe	Asp	Tyr	Ser	Gly	Thr	Ser	Leu	Lys	Ala	Leu	Ser	Ile	
131				270					275					280			
133	cac	caa	gtt	gtc	agc	gat	gtg	ttc	ggg	ttt	ccg	caa	agt	tat	atc	tat	960
134	His	Gln	Val	Val	Ser	Asp	Val	Phe	Gly	Phe	Pro	Gln	Ser	Tyr	Ile	Tyr	
135			285					290					295				
137	gaa	atc	ttt	tcg	aat	atg	aac	atc	aaa	aat	ttc	aca	gtg	tct	ggg	aca	1008
138	Glu	Ile	Phe	Ser	Asn	Met	Asn	Ile	Lys	Asn	Phe	Thr	Val	Ser	Gly	Thr	
139		300					305					310					
141	cgc	atg	gtc	cac	atg	ctt	tgc	cca	tcc	aaa	att	agc	ccg	ttc	ctg	cat	1056
142	Arg	Met	Val	His	Met	Leu	Cys	Pro	Ser	Lys	Ile	Ser	Pro	Phe	Leu	His	
143	315					320					325				330		
145	ttg	gat	ttt	tcc	aat	aat	ctc	tta	aca	gac	acg	ggt	ttt	gaa	aat	tgt	1104
146	Leu	Asp	Phe	Ser	Asn	Asn	Leu	Leu	Thr	Asp	Thr	Val	Phe	Glu	Asn	Cys	
147				335						340				345			
149	ggg	cac	ctt	act	gag	ttg	gag	aca	ctt	att	tta	caa	atg	aat	caa	tta	1152
150	Gly	His	Leu	Thr	Glu	Leu	Glu	Thr	Leu	Ile	Leu	Gln	Met	Asn	Gln	Leu	
151			350					355					360				
153	aaa	gaa	ctt	tca	aaa	ata	gct	gaa	atg	act	aca	cag	atg	aag	tct	ctg	1200
154	Lys	Glu	Leu	Ser	Lys	Ile	Ala	Glu	Met	Thr	Thr	Gln	Met	Lys	Ser	Leu	
155		365					370					375					
157	caa	caa	ttg	gat	att	agc	cag	aat	tct	gta	agc	tat	gat	gaa	aag	aaa	1248
158	Gln	Gln	Leu	Asp	Ile	Ser	Gln	Asn	Ser	Val	Ser	Tyr	Asp	Glu	Lys	Lys	
159		380				385					390						
161	gga	gac	tgt	tct	tgg	act	aaa	agt	tta	tta	agt	tta	aat	atg	tct	tca	1296
162	Gly	Asp	Cys	Ser	Trp	Thr	Lys	Ser	Leu	Leu	Ser	Leu	Asn	Met	Ser	Ser	
163	395				400				405					410			
165	aat	ata	ctt	act	gac	act	att	ttc	aga	tgt	tta	cct	ccc	agg	atc	aag	1344
166	Asn	Ile	Leu	Thr	Asp	Thr	Ile	Phe	Arg	Cys	Leu	Pro	Pro	Arg	Ile	Lys	
167				415					420					425			
169	gta	ctt	gat	ctt	cac	agc	aat	aaa	ata	aag	agc	att	cct	aaa	caa	gtc	1392
170	Val	Leu	Asp	Leu	His	Ser	Asn	Lys	Ile	Lys	Ser	Ile	Pro	Lys	Gln	Val	
171			430						435					440			
173	gta	aaa	ctg	gaa	gct	ttg	caa	gaa	ctc	aat	ggt	gct	ttc	aat	tct	tta	1440
174	Val	Lys	Leu	Glu	Ala	Leu	Gln	Glu	Leu	Asn	Val	Ala	Phe	Asn	Ser	Leu	
175		445				450						455					
177	act	gac	ctt	cct	gga	tgt	ggc	agc	ttt	agc	agc	ctt	tct	gta	ttg	atc	1488
178	Thr	Asp	Leu	Pro	Gly	Cys	Gly	Ser	Phe	Ser	Ser	Leu	Ser	Val	Leu	Ile	
179		460				465						470					
181	att	gat	cac	aat	tca	ggt	tcc	cac	cca	tca	gct	gat	ttc	ttc	cag	agc	1536
182	Ile	Asp	His	Asn	Ser	Val	Ser	His	Pro	Ser	Ala	Asp	Phe	Phe	Gln	Ser	
183	475				480						485				490		
185	tgc	cag	aag	atg	agg	tca	ata	aaa	gca	ggg	gac	aat	cca	ttc	caa	tgt	1584
186	Cys	Gln	Lys	Met	Arg	Ser	Ile	Lys	Ala	Gly	Asp	Asn	Pro	Phe	Gln	Cys	
187			495						500					505			
189	acc	tgt	gag	ctc	gga	gaa	ttt	gtc	aaa	aat	ata	gac	caa	gta	tca	agt	1632
190	Thr	Cys	Glu	Leu	Gly	Glu	Phe	Val	Lys	Asn	Ile	Asp	Gln	Val	Ser	Ser	
191			510						515					520			
193	gaa	gtg	tta	gag	ggc	tgg	cct	gat	tct	tat	aag	tgt	gac	tac	ccg	gaa	1680
194	Glu	Val	Leu	Glu	Gly	Trp	Pro	Asp	Ser	Tyr	Lys	Cys	Asp	Tyr	Pro	Glu	

RAW SEQUENCE LISTING

DATE: 05/16/2002

PATENT APPLICATION: US/09/950,041

TIME: 13:06:15

Input Set : A:\DX0724XK\lseqlist.txt

Output Set: N:\CRF3\05162002\I950041.raw

```

195          525          530          535
197 agt tat aga gga acc cta cta aag gac ttt cac atg tct gaa tta tcc      1728
198 Ser Tyr Arg Gly Thr Leu Leu Lys Asp Phe His Met Ser Glu Leu Ser
199          540          545          550
201 tgc aac ata act ctg ctg atc gtc acc atc gtt gcc acc atg ctg gtg      1776
202 Cys Asn Ile Thr Leu Leu Ile Val Thr Ile Val Ala Thr Met Leu Val
203 555          560          565          570
205 ttg gct gtg act gtg acc tcc ctc tgc atc tac ttg gat ctg ccc tgg      1824
206 Leu Ala Val Thr Val Thr Ser Leu Cys Ile Tyr Leu Asp Leu Pro Trp
207          575          580          585
209 tat ctc agg atg gtg tgc cag tgg acc cag acc cgg cgc agg gcc agg      1872
210 Tyr Leu Arg Met Val Cys Gln Trp Thr Gln Thr Arg Arg Arg Ala Arg
211          590          595          600
213 aac ata ccc tta gaa gaa ctc caa aga aat ctc cag ttt cat gca ttt      1920
214 Asn Ile Pro Leu Glu Glu Leu Gln Arg Asn Leu Gln Phe His Ala Phe
215          605          610          615
217 att tca tat agt ggg cac gat tct ttc tgg gtg aag aat gaa tta ttg      1968
218 Ile Ser Tyr Ser Gly His Asp Ser Phe Trp Val Lys Asn Glu Leu Leu
219          620          625          630
221 cca aac cta gag aaa gaa ggt atg cag att tgc ctt cat gag aga aac      2016
222 Pro Asn Leu Glu Lys Glu Gly Met Gln Ile Cys Leu His Glu Arg Asn
223 635          640          645          650
225 ttt gtt cct ggc aag agc att gtg gaa aat atc atc acc tgc att gag      2064
226 Phe Val Pro Gly Lys Ser Ile Val Glu Asn Ile Ile Thr Cys Ile Glu
227          655          660          665
229 aag agt tac aag tcc atc ttt gtt ttg tct ccc aac ttt gtc cag agt      2112
230 Lys Ser Tyr Lys Ser Ile Phe Val Leu Ser Pro Asn Phe Val Gln Ser
231          670          675          680
233 gaa tgg tgc cat tat gaa ctc tac ttt gcc cat cac aat ctc ttt cat      2160
234 Glu Trp Cys His Tyr Glu Leu Tyr Phe Ala His His Asn Leu Phe His
235          685          690          695
237 gaa gga tct aat agc tta atc ctg atc ttg ctg gaa ccc att ccg cag      2208
238 Glu Gly Ser Asn Ser Leu Ile Leu Ile Leu Leu Glu Pro Ile Pro Gln
239          700          705          710
241 tac tcc att cct agc agt tat cac aag ctc aaa agt ctc atg gcc agg      2256
242 Tyr Ser Ile Pro Ser Ser Tyr His Lys Leu Lys Ser Leu Met Ala Arg
243 715          720          725          730
245 agg act tat ttg gaa tgg ccc aag gaa aag agc aaa cgt ggc ctt ttt      2304
246 Arg Thr Tyr Leu Glu Trp Pro Lys Glu Lys Ser Lys Arg Gly Leu Phe
247          735          740          745
249 tgg gct aac tta agg gca gcc att aat att aag ctg aca gag caa gca      2352
250 Trp Ala Asn Leu Arg Ala Ala Ile Asn Ile Lys Leu Thr Glu Gln Ala
251          750          755          760
253 aag aaa tagtctaga      2367
254 Lys Lys
258 <210> SEQ ID NO: 2
259 <211> LENGTH: 786
260 <212> TYPE: PRT
261 <213> ORGANISM: Homo sapiens

```

RAW SEQUENCE LISTING

DATE: 05/16/2002

PATENT APPLICATION: US/09/950,041

TIME: 13:06:15

Input Set : A:\DX0724XK1seqlist.txt

Output Set: N:\CRF3\05162002\I950041.raw

263 <400> SEQUENCE: 2

```

265 Met Thr Ser Ile Phe His Phe Ala Ile Ile Phe Met Leu Ile Leu Gln
266           -20                -15                -10
269 Ile Arg Ile Gln Leu Ser Glu Glu Ser Glu Phe Leu Val Asp Arg Ser
270       -5                -1 1                5                10
273 Lys Asn Gly Leu Ile His Val Pro Lys Asp Leu Ser Gln Lys Thr Thr
274           15                20                25
277 Ile Leu Asn Ile Ser Gln Asn Tyr Ile Ser Glu Leu Trp Thr Ser Asp
278           30                35                40
281 Ile Leu Ser Leu Ser Lys Leu Arg Ile Leu Ile Ile Ser His Asn Arg
282           45                50                55
285 Ile Gln Tyr Leu Asp Ile Ser Val Phe Lys Phe Asn Gln Glu Leu Glu
286           60                65                70
289 Tyr Leu Asp Leu Ser His Asn Lys Leu Val Lys Ile Ser Cys His Pro
290 75                80                85                90
293 Thr Val Asn Leu Lys His Leu Asp Leu Ser Phe Asn Ala Phe Asp Ala
294           95                100                105
297 Leu Pro Ile Cys Lys Glu Phe Gly Asn Met Ser Gln Leu Lys Phe Leu
298           110                115                120
301 Gly Leu Ser Thr Thr His Leu Glu Lys Ser Ser Val Leu Pro Ile Ala
302           125                130                135
305 His Leu Asn Ile Ser Lys Val Leu Leu Val Leu Gly Glu Thr Tyr Gly
306           140                145                150
309 Glu Lys Glu Asp Pro Glu Gly Leu Gln Asp Phe Asn Thr Glu Ser Leu
310 155                160                165                170
313 His Ile Val Phe Pro Thr Asn Lys Glu Phe His Phe Ile Leu Asp Val
314           175                180                185
317 Ser Val Lys Thr Val Ala Asn Leu Glu Leu Ser Asn Ile Lys Cys Val
318           190                195                200
321 Leu Glu Asp Asn Lys Cys Ser Tyr Phe Leu Ser Ile Leu Ala Lys Leu
322           205                210                215
325 Gln Thr Asn Pro Lys Leu Ser Ser Leu Thr Leu Asn Asn Ile Glu Thr
326           220                225                230
329 Thr Trp Asn Ser Phe Ile Arg Ile Leu Gln Leu Val Trp His Thr Thr
330 235                240                245                250
333 Val Trp Tyr Phe Ser Ile Ser Asn Val Lys Leu Gln Gly Gln Leu Asp
334           255                260                265
337 Phe Arg Asp Phe Asp Tyr Ser Gly Thr Ser Leu Lys Ala Leu Ser Ile
338           270                275                280
341 His Gln Val Val Ser Asp Val Phe Gly Phe Pro Gln Ser Tyr Ile Tyr
342           285                290                295
345 Glu Ile Phe Ser Asn Met Asn Ile Lys Asn Phe Thr Val Ser Gly Thr
346           300                305                310
349 Arg Met Val His Met Leu Cys Pro Ser Lys Ile Ser Pro Phe Leu His
350 315                320                325                330
353 Leu Asp Phe Ser Asn Asn Leu Leu Thr Asp Thr Val Phe Glu Asn Cys
354           335                340                345
357 Gly His Leu Thr Glu Leu Glu Thr Leu Ile Leu Gln Met Asn Gln Leu
358           350                355                360

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/950,041

DATE: 05/16/2002
TIME: 13:06:16

Input Set : A:\DX0724XK1seqlist.txt
Output Set: N:\CRF3\05162002\I950041.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:17; Xaa Pos. 93,149
Seq#:18; Xaa Pos. 93,149
Seq#:19; Xaa Pos. 48
Seq#:20; Xaa Pos. 48
Seq#:23; N Pos. 316,380,407,408
Seq#:23; Xaa Pos. 35,105,106,127,136
Seq#:24; Xaa Pos. 35,105,106,127,136
Seq#:36; Xaa Pos. 725
Seq#:37; Xaa Pos. 725
Seq#:40; N Pos. 2529

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/950,041

DATE: 05/16/2002

TIME: 13:06:16

Input Set : A:\DX0724XKlseqlist.txt

Output Set: N:\CRF3\05162002\I950041.raw

L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:2818 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17 after pos.:288
L:2834 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17 after pos.:480
L:2913 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:80
L:2929 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18 after pos.:144
L:2958 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19 after pos.:144
L:3018 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:32
L:3191 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:144
L:3206 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:288
L:3207 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:336
L:3210 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:336
L:3211 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:384
L:3214 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:384
L:3215 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:432
L:3299 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:32
L:3315 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:96
L:3319 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:112
L:3323 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:128
L:4785 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:2256
L:5057 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:736
L:5819 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:40 after pos.:2515